

Homework 7

Ordering Heuristics for Search: Terminology and Mechanisms

Assigned: Monday, April 6, 2009

Due: Monday, April 13, 2009

Notes: This homework must be done individually. *If you receive help from anyone, you must clearly acknowledge it.* Always acknowledge sources of information (URL, book, class notes, etc.). Please inform instructor quickly about typos or other errors.

The goal of this homework is to help you become more confident with ordering heuristics terminology and algorithms by enticing you to review the lecture material and research it further for completeness and correctness.

1 General Principal

What is the general principal for

1. value ordering? *(2 points)*
2. variable ordering? *(2 points)*

2 Ordering Heuristics

Consider ordering heuristics for search below:

1. Min-conflict heuristic (value ordering).
2. The promise heuristic for value ordering.
3. The promise heuristic for variable ordering.
4. Minimal width ordering.
5. Maximal cardinality ordering.

For *each* of the above listed heuristics, answer the following questions:

1. State whether the heuristic is suitable to be used during search in a static, dynamic, or both fashion. *(2 points)*
2. Informally explain what the heuristic tries to achieve. *(3 points)*
3. Informally (or formally) describe how the heuristic is computed (i.e., describe the algorithm that implements this mechanism). *(7 points)*